UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,217	10/15/2003	Issei Yoshida	JP920020132US1	9470

			EXAMINER
24852	7590	06/01/2006	ADAMS, CHARLES D

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2164	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *15 October 2003*.
2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-16* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *1-16* is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All b) ☐ Some * c) ☐ None of:

      1. ☒ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

SAM RIMELL
PRIMARY EXAMINER

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10-15-03 & 7-5-05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claims 3, 4, and 8 are objected to because of the following informalities:

The 'if' that occurs in the claims makes any following limitations optionally

recited. Appropriate correction is required.

Claim 16 is object to because of the following informalities:

Due to its placement in the claims, and the referred to antecedent basis ("the

classification catalog stored in said storage device", which is found in claim 15),

Examiner has read claim 16 to depend on claim 15, not claim 1 as listed.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

3.   Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete

for omitting essential steps, such omission amounting to a gap between the steps. See

MPEP § 2172.01. The omitted steps are: no categories are claimed previous to

mentioning "each category".

4.   Claims 3-5, 8, and 11-13 are rejected under 35 U.S.C. 112, second paragraph,

as being indefinite for failing to particularly point out and distinctly claim the subject

matter which applicant regards as the invention.

Claims 3, 8, and 11 recites the limitation "a given standard" in line 3. However, no such standard is claimed, nor is any information claimed as to how to determine said standard.

Claim 4 recites the limitation "the given standard" in line 3, and "the number of documents" in line 4. There is insufficient antecedent basis for these limitations in the claim. Claim 4 also recites the limitation "wherein said unnecessary word determination means determines the word extracted from said given category to be an unnecessary word if it appears more frequently in another category than the given standard determined according to a predetermined threshold and the number of documents belonging to said category". However, it is unclear exactly how the two values ("more frequently in another category than the given standard" and "the number of documents belonging to said category") are being used in conjunction to determine a standard for judging whether or not a word is an unnecessary word.

Claim 5 recites the limitation "said classification catalog" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim 12 recites the limitation "where said given standard is a value obtained from the number of documents in said other categories and a predetermined given threshold". However, it is unclear how the two values ("said given standard obtained from the number of documents in said other categories" and "a predetermined given

standard") are being used in conjunction to determine a standard for judging whether or not a word is an unnecessary word.

Claim 13 recites the limitation "wherein said given standard is determined according to said frequency of the word in said other categories and a total frequency of all words in said other categories". However, it is unclear how the two values ("said given standard determined according to said frequency of the word in said other categories" and "a total frequency of all words in said other categories") are used in conjunction to determine a standard for judging whether or not a word is an unnecessary word.

5.   Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim is generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

See, in the present application, claim 6, lines 7-10:

An unnecessary word elimination unit for eliminating an unnecessary word for each category concerned from the table on the basis of a frequency of appearance in each category of a given word acquired from the table broken down by category generated by said category table generation unit.

Examiner interpreted the table mentioned in line 2 of the above passage (line 8

of claim 6) to be the same table as 'a table broken down by category generated by said

category table generation unit" mentioned in line 4.

Claim Rejections - 35 USC § 101

6.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7.   Claims 1-7 and 9-14 are rejected under 35 U.S.C. 101 because the claimed

invention is directed to non-statutory subject matter.

Though unnecessary words are being determined in the above mentioned

claims, no unnecessary words are being eliminated from the list as a result of these

determinations. As such, the claims lack a useful result.

Claim Rejections - 35 USC § 102

8.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9.   Claims 1-2, 5-7, 10, and 14-16 are rejected under 35 U.S.C. 102(b) as being

anticipated by Esposito et al. ("A Machine Learning Approach to Web Mining").

As to claim 1, <u>Esposito et al</u>. teaches:

List generation means for generating a word list for each category by extracting words from a learning document set (see page 192, Section 3, paragraph 1); and

Unnecessary word determination means for relatively determining an unnecessary word for each category on the basis of a frequency of appearance of a given word in each category by using the list generated by said list generation means (see page 193, paragraph 3, "In order to move quasi-stopwords down in the sorted dictionary, the MaxTF-PF^2 of each term is multiplied by a factor 1/CF(t), where CF(t) (category frequency) is the number of class dictionaries in which the word t occurs. In this way, the sorted dictionary will have the most representative words of each class in the first entries, so that it will be enough to choose the first N words per dictionary in order to define the set of attributes").

As to claim 2, <u>Esposito et al</u>. teaches wherein said list generation means generates a list indicating a frequency of appearance of a given word for each category from said learning document set in the storage means (see page 193, paragraph 2, "class dictionary", and Figure 1, Class Dictionaries).

As to claim 5, <u>Esposito et al</u>. teaches:

Classification catalog storage means for storing a list for each category from which unnecessary words were eliminated based on the determination with said

unnecessary word determination means (see page 193, paragraph 3, and argument from claim 1).

Document classification means for performing classification processing for classification target documents by using said classification catalog stored in the classification catalog storage means (see page 194, section 4, paragraph 1).

As to claim 6, Esposito et al. teaches:

A classified document set storage device for storing documents classified according to category (see page 191, section 2);

A category table generation unit for generating a table broken down by category including information on a frequency of appearance of a word contained in a document acquired from said classified document set storage device (see page 193, paragraphs 1-2, "Class Dictionary", and Figure1);

An unnecessary word elimination unit for eliminating an unnecessary word for each category concerned from the table on the basis of a frequency of appearance in each category of a given word acquired from the table broken down by category generated by said category table generation unit (see page 193, paragraph 3, and the argument in regards to claim 1); and

A classification catalog storage device for storing the table from which the unnecessary word was eliminated by said unnecessary word elimination unit (see page 193, section 3, and the argument in regards to claim 1).

As to claim 7, <u>Esposito et al</u>. teaches:

A classification target document storage device for storing classification target

documents to be classified (see page 197, last paragraph).; and

A document classification processing unit for performing classification processing

for the classification target documents stored in said classification target document

storage device by using said table stored in said classification catalog storage device

(see page 197, last paragraph).

As to claim 10, <u>Esposito et al</u>. teaches:

Extracting a word contained in a document for each category from a storage

device storing a learning document set (see page 192, Section 3, paragraph 1);

Generating a list containing information on a frequency of appearance of the

extracted word for each category (see page 193, paragraphs 1-2, "Class Dictionary",

and Figure1);

Recognizing a frequency of appearance in other categories of a given word

belonging to a given category by using the generated list (see page 193, and the

argument in regards to claim 1); and

Determining an unnecessary word for each category on the basis of the

recognized frequency of appearance (see page 193, and the argument in regards to

claim 1).

As to claim 14, <u>Esposito et al</u>. teaches:

Acquiring information on words for each category from a document set classified according to category stored in a storage device (see page 193, paragraphs 1-2, "Class Dictionary", and Figure1);

Recognizing a frequency of appearance in other categories of a word belonging to a given category on the basis of the acquired information (see page 193, paragraph 3, and the argument in regards to claim 1); and

Determining whether the word is unnecessary for identifying the given category on the basis of the recognized frequency (see page 193, paragraph 3, and the argument in regards to claim 1).

As to claim 15, Esposito et al. teaches:

Generating a document classification catalog by eliminating words determined to be an unnecessary word (see page 193, paragraph 3, and argument from claim 1); and

Storing said classification catalog into the storage device (see page 193, paragraph 3, and argument from claim 1).

As to claim 16, Esposito et al. teaches further comprising the step of performing classification processing for classification target documents by using the classification catalog stored in said storage device (see page 197, last paragraph).

Claim Rejections - 35 USC § 103

10.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

11.   Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Esposito

et al. ("A Machine Learning Approach to Web Mining") in view of Grasso et al (US Pre-

Grant Publication 2004/0254911).

As to claim 9, Esposito et al. teaches the system according to claim 6.

Esposito et al. teaches wherein said table broken down by category generated by

said category table generation unit contains information on the word, a frequency of

appearance of the word (see page 193, paragraph 2, "Class Dictionary"),

Esposito et al. does not teach a part of speech of the word.

Grasso et al. teaches a part of speech of the word (see paragraphs [0037] and

[0039]).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to have modified Esposito et al. by the teaching of Grasso

et al., since Grasso et al. teaches that "using this information, it is possible to determine

whether a word is occurring with above average frequency in a specific text compared

with how frequently it appears on average" (see paragraph [0039]).

12.   Claims 3-4, 8, and 11-12 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Esposito et al. "A Machine Learning Approach to Web Mining") in

view of Neal et al. (US Patent 7,043,492).

        As to claim 3, Esposito et al. does not teach wherein said unnecessary word

determination means extracts a word belonging to a given category and determines it to

be an unnecessary word if the word appears more frequently than a given standard in

another category.

        Neal et al. teaches wherein said unnecessary word determination means extracts

a word belonging to a given category and determines it to be an unnecessary word if

the word appears more frequently than a given standard in another category (see 8:56-

65).

        Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to have modified Esposito et al. in view of Neal et al., since

Neal et al. teaches that "the present invention allows an item to automatically be

classified using its attributes based on a classification schema and a mapping" (see

2:34-36).

        As to claim 4, Esposito et al. does not teach wherein said unnecessary word

determination means determines the word extracted from said given category to be an

unnecessary word if it appears more frequently in another category than the given

standard determined according to a predetermined threshold and the number of

documents belonging to said another category.

Neal et al. teaches wherein said unnecessary word determination means

determines the word extracted from said given category to be an unnecessary word if it

appears more frequently in another category than the given standard determined

according to a predetermined threshold and the number of documents belonging to said

another category (see 8:56-65).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to have modified Esposito et al. in view of Neal et al., since

Neal et al. teaches that "the present invention allows an item to automatically be

classified using its attributes based on a classification schema and a mapping" (see

2:34-36).

As to claim 8, Esposito et al. teaches the system according to claim 6.

Esposito et al. does not teach wherein said unnecessary word elimination unit

extracts a word belonging to a given category and eliminates the word as an

unnecessary word from said table if the word appears more frequently than a given

standard in another category.

Neal et al. teaches wherein said unnecessary word elimination unit extracts a

word belonging to a given category and eliminates the word as an unnecessary word

from said table if the word appears more frequently than a given standard in another

category (see 8:56-65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Esposito et al. in view of Neal et al., since Neal et al. teaches that "the present invention allows an item to automatically be classified using its attributes based on a classification schema and a mapping" (see 2:34-36).

As to claim 11, Esposito et al. teaches the method according to claim 10.

~ Esposito et al. does not teach wherein, in said step of determining the unnecessary word, the unnecessary word is determined according to whether one word selected from the given category appears in said other categories more frequently than a given standard.

Neal et al. teaches wherein, in said step of determining the unnecessary word, the unnecessary word is determined according to whether one word selected from the given category appears in said other categories more frequently than a given standard (see 8:56-65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Esposito et al. in view of Neal et al., since Neal et al. teaches that "the present invention allows an item to automatically be classified using its attributes based on a classification schema and a mapping" (see 2:34-36).

As to claim 12, Esposito et al. as modified teaches wherein said given standard is a value obtained from the number of documents in said other categories and a predetermined given threshold (see 8:56-65).

13.   Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Esposito et al. "A Machine Learning Approach to Web Mining") in view of Neal et al. (US Patent 7,043,492), and further in view of Mohan et al. (US Patent 6,970,881).

As to claim 13, Esposito et al. as modified teaches wherein said given standard is determined according to said frequency of the word in said other categories (see page 193, section 3, paragraph 3 and the argument in regards to claim 1).

Esposito et al. as modified does not teach and a total frequency of all words in said other categories.

Mohan et al. teaches and a total frequency of all words in said other categories (see 8:48-50).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified Esposito et al. by the teaching of Mohan et al., since Mohan et al. teaches that "Concepts having probabilities within a certain range are selected as key concepts to represent the theme, or meaning, of an object. By setting the range, it is possible to dramatically increase precision and recall for objects classification" (see 3:43-47).
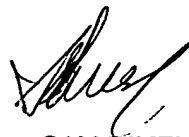
Conclusion

14.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Charles D. Adams whose telephone number is (571)

272-3938. The examiner can normally be reached on 8:30 AM - 5:00 PM, M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Charles Rones can be reached on (571) 272-4085. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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Business Center (EBC) at 866-217-9197 (toll-free).

Charles Adams
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SAM RIMELL
PRIMARY EXAMINER